federal register

MONDAY, NOVEMBER 14, 1977
PART III

DEPARTMENT OF TRANSPORTATION

Coast Guard

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VESSELS OF 1600 GROSS TONS OR MORE

Proposed Electronic Navigation Equipment

[4910–14]

DEPARTMENT OF TRANSPORTATION

Coast Guard

[33 CFR Part 164]

[CGD 77–168]

VESSELS OF 1,600 GROSS TONS OR MORE

Proposed Electronic Navigation Equipment

AGENCY: Coast Guard, DOT.

ACTION: Proposed rule; withdrawal of prior proposed rule.

SUMMARY: This document withdraws an earlier notice of proposed rulemaking and proposes amending the regulations requiring certain navigation equipment on all vessels of 1,600 gross tons or more by adding a requirement for an electronic position fixing device. Many vessels in the coastal area do not have an adequate position fixing capability. This amendment would require vessels entering U.S. navigable waters bound to or from a U.S. port to have that capability.

DATE: Comments must be received before January 13, 1978.

ADDRESSES: Comments should be submitted to Commandant (G–CMC/81) (CGD 77–168), U.S. Coast Guard, Washington, D.C. 20590. Comments will be available for examination at the Marine Safety Council (G–CMC/81), Room 8117, Department of Transportation, Nassif Building, 400 Seventh Street SW., Washington, D.C. 20590. A copy of the economic evaluation from which the economic summary in this document is taken is also available for examination at the above address.

FOR FURTHER INFORMATION CONTACT:

Capt. George K. Greiner, Marine Safety Council (G–CMC/81), Room 8117, Department of Transportation, Nassif Building, 400 Seventh Street SW., Washington, D.C. 20590.

SUPPLEMENTARY INFORMATION: Interested persons are invited to participate in this proposed rulemaking by submitting written views, data, or arguments. Each person submitting a comment should include his or her name and address, identify this notice (CGD 77–168) and the specific section of the proposal to which the comment applies, and give reasons for each comment. All comments received before the expiration of the comment period will be considered before final action is taken on this proposal. No additional public hearing is planned but one may be held at a time and place to be set in a later notice in the FEDERAL REGISTER if such meeting is requested in writing by an interested person raising a genuine issue and desiring to comment orally at a public hearing.

DRAFTING INFORMATION

The principal persons involved in drafting this document are: Mr. Fred Schwer, Office of Marine Environment and Systems, Project Manager, and Mr. Stanley Colby, Office of Chief Counsel, Project Attorney.

WITHDRAWAL OF CGD 77–002

In the January 31, 1977, issue of the FEDERAL REGISTER (42 FR 5966) the Coast Guard published a proposed rule (docket No. CGD 77–002) to require LORAN–C receivers on vessels of 1,600 gross tons or more. Interested persons were given until April 1, 1977, to submit comments. A correction to the notice was published in the FEDERAL REGISTER of February 17, 1977 (42 FR 9685) and the closing date for comments was subsequently extended to April 20, 1977. Public hearings on this proposal were held in Washington on March 4, 1977, and in San Francisco on March 16, 1977.

Seven persons presented oral comments at the Washington hearing. Six were heard in San Francisco. Fifty-nine written comments were received by the closing date, April 20, 1977.

The correction to the notice of proposed rulemaking on LORAN–C published on February 17, 1977 (42 FR 9685) stated in part that a supplementary notice of proposed rulemaking setting forth minimum standards for acceptable LORAN–C receivers would be published in the near future. After analyzing the great number of responses to the notice, the Coast Guard determined that an entirely new proposal should be published. Accordingly, the notice of proposed rulemaking (docket No. CGD 77–002) published in the January 31, 1977, issue of the FEDERAL REGISTER (42 FR 5966), as corrected by the notice of February 17, 1977 (42 FR 9685) is hereby withdrawn.

DISCUSSION OF PROPOSED REGULATIONS

Eighteen letters of comment were received which endorsed the proposal of January 31, 1977. Proponents included individuals, equipment manufacturers, mariners, ship owners, ecology and conservation-oriented groups, and government officials.

Sixteen commenters concurred in the need for an accurate offshore positioning system, but objected to the requirement of a specific system, i.e., LORAN–C. They maintained that other navigation systems can serve equally well and purchase of LORAN–C would be an unnecessary and redundant expense. Ten more commenters objected to the specific requirement of LORAN–C without commenting on the need for better position fixing. Six more pointed out that requirement of any "national" system invites other sovereignties to require their own system, leading to a proliferation of disparate and incompatible systems. Many of the commenters suggested that, rather than require a specific system, the Coast Guard set standards of navigational accuracy or equipment performance and let each mariner decide on how best to meet the requirement.

The proposed requirement for LORAN–C stemmed directly from the National Plan for Navigation (NTIS AD 741944), as amended, which named LORAN–C the primary navigation system for the U.S. Coastal Confluence Zone (CCZ). This is defined in the plan as the area from the U.S. shoreline and harbor entrances to 50 miles offshore or to the 100 fathom curve, whichever is greater. In arriving at that determination, other radio navigation systems were considered. LORAN–C was judged best in terms of capabilities, availability, and cost.

Presently, the single navigation system which can continuously provide a merchant mariner with an adequate positioning capability throughout the CCZ is LORAN–C. Neither Decca nor Differential Omega is generally available. Radar is available only inshore. TRANSIT based satellite navigation systems are extremely accurate, but do not provide continuous information. Some hybrid systems, such as satellite/doppler, satellite/inertial, and satellite/Omega, do provide reasonably accurate information on a continuous basis. Therefore, these hybrid systems are considered to be adequate alternatives to LORAN–C. It must be remembered, however, that all of the satellite systems now in use rely on the TRANSIT satellite, a military system which can be modified or discontinued at any time.

Other radio navigation systems are under development which may meet the intent of this proposed rule. It is proposed that the Coast Guard would consider other receivers or receiver combinations which can be shown to meet the intent of the marine navigation requirements for the U.S. CCZ regarding availability, coverage, and accuracy as stated in the National Plan for Navigation, as amended. In considering other receivers, the Coast Guard would seek to insure that an equivalent level of navigation safety is achieved.

The Coast Guard gave lengthy consideration to the option of requiring an accuracy standard without specifying equipment. The alternative was finally rejected for the reasons stated above and because it would be impossible to enforce economically.

Thirteen commenters requested that the Coast Guard allow LORAN–A or A/C receivers in lieu of LORAN–C until the LORAN–A system is discontinued in 1980. This was considered, but it is believed that vessels of 1,600 gross tons or more need a more accurate positioning capability than LORAN–A can provide.

Five commenters maintained that the level of accuracy attainable with LORAN–C is not necessary until a vessel is within radar range of shore, where radar can provide an even more accurate fix. This is a subjective opinion with which the Coast Guard does not agree. Many coastlines are poor radar targets and provide ambiguous returns at best. Moreover, vessels in convergence areas may have to keep their single radars on a maneuvering and collision avoidance scale and not be able to use it efficiently for navigation.

Six commenters maintained that LORAN–C is limited in coverage and therefore not sufficiently useful. The

proposed regulation does not require LORAN–C in areas where coverage does not exist. However, adequate coverage now exists in almost all of the U.S. continental CCZ, except in the Gulf of Mexico, where LORAN–C chains will be on the air in mid-1978, and on the Great Lakes, scheduled for February 1980. It is not prudent to deprive the greater part of U.S. coastlines the protection provided by LORAN–C simply because some areas do not have coverage yet.

Several individual commenters raised questions concerning the capabilities of the LORAN–C system. Most of the questions concern receiver capabilities, charting accuracy, and availability of Loran signals. A modern LORAN–C receiver which complies with the minimum standards set forth in this proposed regulation should be reliable and easily adjusted. LORAN–C chains routinely achieve a 99.7-percent level of availability and the user is adequately warned of the brief periods of signal unreliability by the "blink" feature. A LORAN–C chart verification program by the Federal government is in progress to provide improved accuracy. Although the LORAN–C system is not perfect, it offers a vast improvement in overall positioning capability in the U.S. CCZ when compared with most other available systems.

The Special Committee of the Radio Technical Commission for Marine Services (RTCM) is developing a Minimum Performance Specification (MPS) for Marine LORAN–C receivers. The Coast Guard feels that proceeding with this proposal is too vital to the public interest to delay pupblication until the RTCM Executive Committee has approved the MPS. Persons desiring to comment should be aware of the MPS and may consider it a detailed standard against which this proposal may be evaluated. Moreover, the RTCM MPS will contain definitions, explanations, and test procedures which also may aid the purchaser.

The minimum standards set forth in the proposed new § 164.41 (c) and (d) are those characteristics which will provide for an adequate position fixing capability within the limits of the U.S. CCZ. A lesser device may not be capable of using the systems' full potential. It is recognized that the "state-of-the-art" in receiver electronics is evolving rapidly. However, unless technological advances make these standards markedly obsolescent, the Coast Guard would allow continued use of receivers installed under these standards for a reasonable period of time.

While the Coast Guard proposes to require an electronic position fixing device on all vessels of 1,600 gross tons or more that enter U.S. waters, it recognizes that a requirement of this nature would place a sudden surge on manufacturers' capabilities and could cause a severe backlog problem. Accordingly, the Coast Guard proposes that if the amendment is adopted, it will become effective for each category of vessel at staggered intervals. Because the tank vessel segment of the industry is somewhat smaller than the freighter segment, and because the ability to accurately navigate tankers has assumed much greater importance of late, it is proposed that this segment of the industry would be required to comply with the regulations at the earliest time, such as 120 days after publication of the rule. It is proposed to require the remaining vessels to comply one year after publication of the rule.

This proposal has been reviewed for economic effects under Department of Transportation "Policies to Improve Analysis and Review of Regulations" (41 FR 16200). The Coast Guard estimates that there would be no more than 500 U.S. and 5,000 foreign flag vessels which might be affected by this rule. Of those, it is estimated that 50 percent of U.S. and 20 percent of foreign flag vessels already have a suitable electronic positioning device installed. Therefore, approximately 250 U.S. and 4,000 foreign flag vessels would have to purchase and install the equipment.

For the purpose of this analysis, it is estimated that the average cost for installed equipment would be $8,000 for LORAN–C and $35,000 for satellite/Omega hybrid receivers. Satellite/doppler and satellite/inertial systems cost considerably more than either of the previously mentioned systems and therefore probably would not be purchased solely to comply with this regulation. Therefore, for the purpose of this statement, only the LORAN–C and satellite/Omega hybrid systems are considered. The depreciation period is assumed to be seven years and the installed cost would be passed to U.S. consumers in seven equal increments. The economic impact on the U.S. economy for the first year would be the initial cost of the installed equipment for U.S. vessels, plus a portion of the total cost to both U.S. and foreign vessels which will be passed on to the U.S. consumers over the life of the equipment in the form of increased shipping rates. The initial cost of the equipment to foreign vessels is not considered a cost to the U.S. economy.

The highest single year costs to the U.S. shipping industry would be the first year cost of $3,350,000 for initial purchase and installation. First year total impact on the U.S. economy would be $11,5000,000. Total cost of compliance to the U.S. economy over the seven year period would be $60,300,000.

Because of more accurate navigation, the benefits from having this equipment installed include cost saving in vessel operation and the probability of fewer vessel accidents This in turn could yield a reduction in injuries and deaths, as well as savings in search and rescue costs, ship repair costs, and pollution costs.

The following terms are used in the regulation, and are explained here for clarity:

Automatic signal acquisition. After inserting numbers which identify the stations to be used and commanding the receiver to start, no further action by the operator is required to obtain time difference information.

Manually assisted automatic acquisition. In addition to the operations he performs for automatic signal acquisition, the operator must insert, or set, the secondary station course timing numbers. No further action is required by the operator.

In consideration of the foregoing, it is proposed to amend Part 164 of Chapter I of Title 33, Code of Federal Regulations, as follows:

§ 164.30 [Amended]

1. By striknig, in § 164.30, the section number "164.35" and inserting the section number "164.41" in place thereof.

2. By adding a new § 164.41 to read as follows:

§ 164.41 Equipment: Certain vessels.

(a) This section applies to vessels calling at ports in the continental U.S. or on the Gulf of Alaska, except—

(1) Vessels not engaged in commerce and owned or bareboat chartered and operated by the United States, by a State or its political subdivisions, or by a foreign nation; and

(2) Vessels calling only at U.S. ports on the Gulf of Mexico or on the Great Lakes are not required to meet paragraph (b) of this section until LORAN–C for those areas is declared operational by the U.S. Coast Guard.

(b) Each vessel must have—

(1) A LORAN–C receiver that is warranted by the manufacturer as meeting paragraph (c) of this section;

(2) A continual update, satellite-based hybrid navigation receiver (i.e., satellite/doppler, satellite/inertial, or satellite/Omega) that is warranted by the manufacturer as meeting paragraph (d) of this section; or

(3) A receiver other than a LORAN–C or satellite hybrid receiver that the Commandant finds meets the intent of the statements of availability, coverage, and accuracy for the U.S. Coastal Confluence Zone (CCZ) contained in the U.S. Department of Transportation National Plan for Navigation (NTIS AD 741944), as amended. A person desiring a determination by the Commandant on a receiver under this subparagraph must submit to Commandant (G–W/73), Washington, D.C. 20590, a written request describing the receiver. The Commandant may require that the applicant obtain and submit additional data and test results to establish the suitability of the receiver.

(c) Each LORAN–C receiver must—

(1) Have the capability of rejecting at least two near band sources of interference;

(2) Acquire the signal with

(i) Automatic signal acquisition; or

(ii) Manually assisted automatic acquisition, which, as used in this subdivision, means that after manual crude positioning of the receiver's time base relative to that of the received LORAN–

C secondary signal to within 100 microseconds, the receiver must automatically locate the master and secondary signals;

(3) Automatically select correct ground wave cycle on each signal;

(4) Continuously track groundwave phase (cycle) on all pulses;

(5) Automatically display 2 or more time difference readings, simultaneously or sequentially, with a readout resolution of at least 0.1 microseconds and with data updates every 15 seconds or less; and

(6) Automatically activate an alarm for signal "blink," lost signal, signal below useable level, cycle selection disabled or unreliable, and time-difference readings not yet reliable.

(d) A hybrid satellite system must have—

(1) Automatic acquisition of the satellite signals after initial operator settings have been entered;

(2) Position updates derived from satellite information obtained during each satellite pass; and

(3) A continuous tracking complementary system which provides, in between satellite fixes, position update at intervals of one minute or less.

§ 164.53 [Amended]

3. By adding in § 164.53(b) the words "radio navigation receivers," after the word "radar," and before the word "gyrocompass."

(Sec. 104, Stat. 427 (33 U.S.C. 1224); sec. 201(3), 86 Stat. 428, as amended (46 U.S.C. 391a(3)); 49 CFR 1.46(n)(4).)

NOTE.—The Coast Guard has determined that this document does not contain a major proposal requiring preparation of an Economic Impact Statement under Executive Order 11821, as amended, and OMB Circular A-107.

Dated: November 8, 1977.

E. L. PERRY,
Vice Admiral, U.S. Coast Guard,
Acting Commandant.

[FR Doc.77-32911 Filed 11-11-77;8:45 am]